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The Indirect Effects of Social Anxiety and Social Support on Alcohol Use Among UK University Students: The Role of Negative Reinforcement

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Supplementary Materials: Code, Data, Materials [see Index of Supplementary Materials]

Abstract

Background: Socially anxious students may be vulnerable to risky alcohol use, whereas perceived social support may be protective; however, the mechanisms through which social anxiety heightens risk and perceived social support reduces risk remain unclear. This study examined how social anxiety and perceived social support influence risky alcohol use through negative-reinforcement pathways of coping and conformity drinking motives.

Method: A convenience sample of undergraduate students from a large university in the United Kingdom (N = 152; 74% female) completed an online self-report survey assessing perceived social support (MSPSS), social anxiety (SIAS), drinking motives (DMQ-R), and past-year alcohol use (AUDIT-C score). Using a cross-sectional observational design, structural equation modelling was conducted to test direct and indirect associations among study variables.

Results: Social anxiety significantly predicted coping (β = .260, p = .001) and conformity (β = .222, p = .006) motives. Past-year alcohol use was predicted by coping motives (β = .429, p < .001), but not by conformity motives. An indirect effect of social anxiety on alcohol use via coping motives was identified (β = .113, p = .005). Perceived social support was associated with lower coping motives (β = −.172, p = .038), but not with conformity motives. A protective indirect effect of

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perceived social support on alcohol use via lowered endorsement of coping motives was also observed (β = −.074, p = .037).

Conclusion: The findings suggest that social anxiety may increase risky alcohol use through coping motives, whereas perceived social support may protect against risky alcohol use by reducing coping-motivated drinking, thereby partially counteracting this risk pathway.

Keywords

drinking motives, social anxiety, social support, alcohol use, university students, United Kingdom

Risky alcohol use refers to drinking that exceeds recommended guidelines and leads to negative health and social consequences (Rehm et al., 2020). It continues to be a significant public health concern among adolescents and young adults (Davoren et al., 2016; World Health Organisation, 2024). In the United Kingdom, a systematic review of studies revealed that between 63% and 84% of university students scored 8 or higher on the Alcohol Use Disorders Identification Test (AUDIT), indicating levels of risky alcohol use (Davoren et al., 2016). Although many students do not meet the full criteria for Alcohol Use Disorder (AUD) or may eventually *"grow out of"* risky alcohol use, these patterns established during young adulthood often persist into later stages of the lifespan (Arria et al., 2016). To minimise the risks associated with heavier alcohol use, prevention efforts should be informed not only by the prevalence and patterns of alcohol use, but also by the underlying motives that drive this behaviour.

Drinking motives are regarded as proximal predictors of alcohol use (Cooper, 1994; Kuntsche et al., 2014), based on the assumption that individuals consume alcohol to achieve specific desired outcomes. According to Cooper's (1994) four-factor model, drinking motivations emerge from the valence (i.e., reducing negative affect or enhancing positive affect) and the source (i.e., internal or external) of expected reinforcement from alcohol use. These motivations are categorized as social (positive, external), enhancement (positive, internal), conformity (negative, external), and coping (negative, internal) motives.

Different drinking motives are also associated with specific behaviours and situational contexts. Coping drinking motives apply in contexts where alcohol can reduce negative affect (Kuntsche et al., 2006). Coping motives are also associated with increased risk for developing alcohol related problems and dependence, which can lead to withdrawal symptoms and increased tolerance to alcohol (Corbin et al., 2013). Like coping motives, drinking for conformity reasons (e.g., to fit in) also involves negative reinforcement of alcohol use, but in this case by avoiding peer rejection (Kuntsche et al., 2014). Those who drink to enhance their emotions (e.g., to increase positive mood) tend to consume more alcohol and report a higher frequency of intoxication (Wardell et al., 2020). In contrast, individuals who drink for social reasons generally exhibit more moderate drinking patterns (Kuntsche et al., 2014).

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Social anxiety is defined as a fear of being observed or negatively evaluated by others (APA, 2013). Among university students, this fear can significantly influence drinking behaviour. Indeed, such individuals may engage in risky alcohol use to avoid potential judgment from peers, to cope with pressure to drink, or because they perceive alcohol as a socially accepted way to reduce anxiety in social situations (Buckner & Heimberg, 2010). The self-medication hypothesis is frequently cited in the literature to explain the co-occurrence of social anxiety and risky alcohol use (Khantzian, 1997; Turner et al., 2018). As social anxiety can negatively affect interpersonal functioning, individuals with social anxiety may use alcohol as a form of self-medication during such interactions (Buckner & Terlecki, 2016).

Drinking behaviour varies across different social and contextual situations, which may help explain why young adults endorse particular drinking motives (Norberg et al., 2010; Terlecki & Buckner, 2015). For example, a study by Villarosa-Hurlocker et al. (2019) conducted among university students found that endorsement of negative reinforcement drinking motives (i.e., coping and conformity motives combined) were more prevalent than positive reinforcement drinking motives among those with symptoms of social anxiety and negative reinforcement motives were also more predictive of alcohol-related problems. At the same time, they reported that negative-reinforcement motives mediated most of the association between symptoms of social anxiety and alcohol-related problems. Indeed, a large body of research has linked social anxiety with risky alcohol use (Buckner et al., 2013; Clerkin et al., 2014; Ham, 2009). Furthermore, evidence from a meta-analytic study (Cooper et al., 2016) suggests that this relationship is driven primarily by coping motives compared to other motives.

While coping motives were rather consistently found to mediate the relationship between social anxiety and risky alcohol use, the role of conformity motives appears less stable. Some research finds conformity-motive mediation of the effect of higher social anxiety on risky alcohol use (Buckner & Terlecki, 2016; Terlecki & Buckner, 2015), but other work shows that mediating effects of conformity diminish once coping motives are modelled simultaneously (Ham, 2009). These discrepancies suggest that conformity motives may act as a rather secondary pathway. Although coping and conformity drinking motives represent proximal mechanisms translating vulnerability into drinking behaviour, they are themselves shaped by broader psychosocial predictors.

Given that students with elevated social anxiety are less likely to seek treatment for risky alcohol use (Schry & White, 2013), identifying those at risk and understanding the mechanisms underlying their alcohol use is crucial. At the same time, it is equally important to examine protective factors that may independently reduce vulnerability to risky alcohol use. In addition to social anxiety, perceived social support has been identified as a distal predictor of risky alcohol use, reflecting the quality and availability of interpersonal resources within an individual's social environment (Lechner et al., 2020). Perceived social support is one of the most extensively studied constructs in the literature (Haber

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et al., 2007; Peirce et al., 2000). It is typically measured by assessing an individual's perception of the availability and adequacy of their social ties. Students with higher-quality social networks consistently report lower levels of alcohol use, whereas those whose social circles are limited and unsupportive report greater alcohol use and increased mental health deterioration (Wang et al., 2015). Recent work conceptualises social anxiety and perceived social support as distal predictors, with drinking motives functioning as proximal mechanisms that translate these factors into behavioural outcomes (Moak & Agrawal, 2009; Caumiant et al., 2023; René Freichel et al., 2023). Although coping motives help to explain the link between social anxiety and risky alcohol use, few studies have examined protective factors that might operate through alternative pathways. Consistent with stress-buffering theory (Cohen & Wills, 1985), greater perceived social support may reduce coping-motivated alcohol use (Tinajero et al., 2019). Building on this framework, the present study aims to explore the complex relationships between the distal predictors of both social anxiety and perceived social support and risky alcohol use, as well as the role of proximal negative-reinforcement pathways in this association. By considering the simultaneous effects of both risk and protective distal predictors (i.e., social anxiety vs. perceived social support), the study seeks to identify key psychological mechanisms underlying the target relationship, thereby informing potentially tailored intervention strategies in applied settings.

Specifically, the present study tests the following hypotheses. First, higher social anxiety would be indirectly associated with greater risky alcohol use through stronger endorsement of coping drinking motives. Second, a smaller secondary indirect effect of social anxiety on risky alcohol use through conformity motives was hypothesised. In contrast, as a protective pathway, higher perceived social support will be indirectly associated with reduced risky alcohol use through lower endorsement of negative reinforcement motives.

Method

Design

An observational study design based on cross-sectional data was adopted. The study aimed to examine the relationships among social anxiety, perceived social support, two negative-reinforcement drinking motives, and risky alcohol use. In the analyses, risky alcohol use was hypothesised as the outcome variable; social anxiety and perceived social support were hypothesised as distal predictors. Coping and conformity motives were specified as the hypothesised mediating variables.

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Participants and Procedure

The sample consisted of a total of 152 (74% female) undergraduate students recruited from the Coventry University, United Kingdom. All participants were at least 18 years old with a mean age of 20.2 years (*SD* = 1.7). Inclusion criteria were: 1) aged 18 to 25 years, 2) consumed at least one alcoholic beverage in the past 6 months.

The study was approved by the Institutional Ethics Board (P162816) of Coventry University. The study followed the ethical guidelines of the BPS (British Psychological Society, 2021). Prior to responding, all participants provided informed consent. To preserve participant confidentiality, all responses were collected anonymously and indexed only by non-identifying completion-order numbers generated by the survey platform.

To recruit the participants, a combination of convenience and self-selection approaches were used. Participants volunteered to take part in the online study using JISC Online Surveys (https://onlinesurveys.jisc.ac.uk/), which is accessed via the SONA portal (https://www.sona-systems.com/). All participants completed the same set of questionnaires as defined further. At the end of the study, participants were debriefed. Finally, participants were thanked for their participation and received credits that could be used for course requirements. The whole study took approximately 20 minutes to complete.

Measures

1. Social Interaction Anxiety Scale (SIAS)

Social anxiety was measured using the shortened 6-item version of the Social Interaction Anxiety Scale (SIAS; Peters et al., 2012), derived from the original 20-item instrument developed by Mattick and Clarke (1998). Respondents rated each item on a five-point Likert scale, from 1 ("Not at all characteristic or true of me") to 5 ("Extremely characteristic or true of me"). In the present study, item responses were coded from 1 to 5 rather than the standard 0 to 4 scoring format commonly used with the SIAS-6. Consequently, total scores ranged from 6 to 30 (rather than 0 to 24 on the standard metric). The total SIAS score was calculated by summing all six items, with higher scores indicating greater social anxiety symptoms in social interactions.

The shortened SIAS has demonstrated good construct validity and internal consistency (α = .79–.85; Le Blanc et al., 2014). In the current study, reliability was similarly strong, with Cronbach's α = .81 and an average inter-item correlation of .41.

2. Alcohol Use Disorders Identification Test (AUDIT-C)

The AUDIT-C is a 3-item self-report screening tool designed to identify risky alcohol use (Bush, 1998). Respondents completed three items assessing drinking frequency, typical quantity consumed, and frequency of heavy episodic drinking over the past year. Each item was rated on a five-point Likert scale ranging from 1 (lowest frequency/quantity)

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to 5 (highest frequency/quantity). With three items rated on this five-point scale, total scores can range from 3 to 15.

The total AUDIT-C score, calculated by summing the three items, reflects overall alcohol use, with higher scores indicating greater consumption. In the literature, the recommended cut-off scores for AUDIT–C vary across specific context of the studies. In the standard AUDIT-C scoring format, item responses are coded from 0 (lowest frequency/quantity) to 4 (highest frequency/quantity), whereas in the present study responses were coded from 1 to 5. Using the standard scoring format, recommended cut-off scores for UK university students have been reported as ≥ 6 for men and ≥ 5 for women for detecting risky/hazardous drinking (Reinert & Allen, 2007). On the scoring metric used in the present study, these thresholds would correspond approximately to ≥ 9 for men and ≥ 8 for women. However, in the present analyses the full continuous scale ranging from 3 to 15 was retained rather than categorising participants according to cut-off levels.

The AUDIT-C has demonstrated good construct validity across various populations, including university students (Campbell & Maisto, 2018), clinical samples (Bush, 1998), and the general population (van Gils et al., 2021). In the present study, internal consistency of the AUDIT-C was acceptable for a short scale (Loewenthal & Lewis, 2018; Cronbach's α = .62; average inter-item correlation = .36).

3. The Multidimensional Scale of Perceived Social Support (MSPSS)

Perceived social support was assessed using the Multidimensional Scale of Perceived Social Support (MSPSS), a 12-item self-report measure evaluating support from three sources: family, friends, and significant others (Zimet et al., 1988). Items were rated on a seven-point Likert scale from 1 ("Very strongly disagree") to 7 ("Very strongly agree"), with higher scores indicating greater perceived support. With 12-items rated on a five-point scale, total scores can range from 12 to 84. The total MSPSS score was calculated as the sum of all 12 items. Total scores of 12–35 indicate low perceived social support, scores of 36–60 indicate moderate perceived social support, and scores of 61–84 indicate high perceived social support.

The MSPSS has demonstrated desirable psychometric properties, including high internal consistency and test-retest reliability (Zimet et al., 1988; Dambi et al., 2018). In the present study, internal consistency was excellent for the total score (Cronbach's α = .92; average inter-item correlation = .48).

4. Drinking Motives (DMQ-R)

This study focused on two specific drinking motives: coping and conformity, assessed using the Drinking Motives Questionnaire – Revised (DMQ-R) by Cooper (1994). The DMQ-R comprises four subscales, each reflecting a different motive for alcohol use, with higher scores indicating stronger endorsement of a given motive. However, only the

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two negative-reinforcement motive subscales (coping and conformity) were used in the present study.

Respondents rated their agreement with five items per motive on a five-point Likert scale ranging from 1 ("Never/Almost never") to 5 ("Always/Almost always"). With each motives rated on a five-point scale, total scores can range from 5 to 25. Scores for each motive were calculated by summing the responses across the corresponding items.

The DMQ-R has demonstrated good psychometric properties among university and adolescent populations (Cooper, 1994; Martens et al., 2008). In the present study, internal consistency was acceptable for both subscales used: coping (Cronbach's α = .82, average inter-item correlation = .48) and conformity (Cronbach's α = .86, average inter-item correlation = .55).

5. Demographic Variables

Gender and age were collected as demographics and included as control variables in the analysis. Gender was coded as a binary variable (1 = male, 0 = female), while age was treated as a continuous variable.

Data Analysis

Structural equation modelling (SEM) was used to examine the direct and indirect relationships among the measures described above. SEM enables the simultaneous analysis of multiple endogenous (dependent) and exogenous (independent) variables, providing a comprehensive framework for modelling complex relationships between variables. This general framework also facilitates mediation analysis, particularly in models involving multiple mediating variables, as in the present study.

1. Model Specification

The study focused on three primary variables: risky alcohol use over the past year (AUDIT-C), social anxiety (SIAS), and perceived social support (MSPSS). The AUDIT-C total score served as the target endogenous variable (outcome), while SIAS and MSPSS were the main independent variables (i.e., distal predictors). Their effects on risky alcohol use were hypothesised to be indirect, operating through two mediating variables: coping and conformity drinking motives. Gender and age were included as control variables.

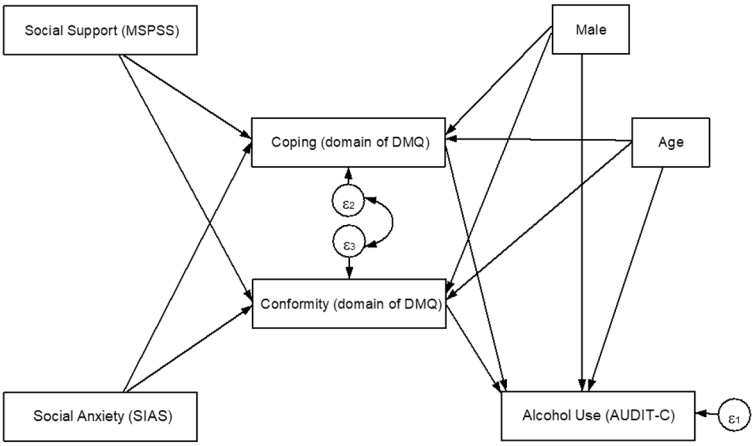
Figure 1 presents the SEM specified for the mediation analysis. The indirect effects of both distal predictors (SIAS and MSPSS) on the outcome were hypothesised to be mediated by the respective drinking motives. A full mediation model, rather than partial one, was specified, as the pairwise correlations between the distal predictors and the outcome were found to be very low, suggesting limited evidence for residual direct effects after accounting for the hypothesised mediators. For the two mediating variables, the error terms were allowed to freely covary (in Figure 1, covariance between ε_2 and ε_3).

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The covariance between the error terms of coping and conformity motives is theoretically justified by their shared basis in the broader construct of drinking motives, as measured by the DMQ-R. This covariance accounts for unmeasured heterogeneity among respondents—such as psychological, familial, social, or economic factors—that may influence endorsement of both drinking motives.

Figure 1

Specification of the Structural Equation Model (SEM) Used for Mediation Analysis



Note. The covariance between error terms (ε_2 and ε_3) account for unmeasured heterogeneity among respondents that may influence the two respective drinking motives (e.g., unmeasured psychological, familial, social, or economic factors that may influence endorsement on either drinking motive). The covariance was found to be highly significant (likelihood ratio test on covariance (ε_2, ε_3) = 0: $\chi^2(d.f.) = 7.88(1)$, p-value = 0.005).

2. Bootstrapping

Bootstrapping techniques were used to obtain standard errors and confidence intervals for the parameter estimates. This method enhances the robustness of the findings by providing more accurate estimates of the standard errors (Mooney & Duval, 1993).

3. Significance Testing

The significance of the path coefficients was evaluated using Z-scores and p-values. A p-value of less than .05 was considered statistically significant, with further distinctions made at the .01 and .001 levels.

4. Missingness, Parameter Estimation Procedure and Software

There were no missing observations in the data set for this study. The online survey tool facilitated the collection of complete responses for all items and all psychometric measures described above. Given the complete observations obtained from participants,

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full information maximum likelihood procedure was used to estimate the parameters of the SEM model.

Analyses were conducted using the Stata-15 statistical software program (Stata Corp, 2017), with the application of Stata's *sem* command for the SEM model. The software facilitated both the estimation of the SEM, bootstrapping, and the provision of both direct and indirect mediated effects.

Results

Descriptive Statistics

Descriptive statistics for all variables used in the analyses are presented in Table 1; both means (*SD*) and ranges are presented. Given the item scoring format described in the previous section, descriptive values should be interpreted with reference to the theoretical score ranges implied by the response coding, as this format may appear to inflate raw totals at first glance. Specifically, the AUDIT-C scores in the present study were based on item responses coded from 1 to 5 rather than the standard 0 to 4 format, resulting in a total possible range of 3 to 15 rather than 0 to 12. Consequently, the observed mean AUDIT-C score of 7.0 may appear elevated when compared directly with conventional norms or screening thresholds. However, when applying the equivalent transformed cut-off scores for the coding format used in the present study (≥ 9 for men; ≥ 8 for women), 36% of the total sample scored above the threshold for risky/hazardous drinking. Specifically, this included 33% of male participants and 37% of female participants. Participants' mean SIAS-6 score was 14.3 which corresponds approximately to 8.3 on the standard 0–24 SIAS-6 scoring metric. Using the standard metric equivalent, the sample mean was within the lower-to-moderate range of social anxiety symptom severity. Participants reported relatively favourable levels of perceived social support (M = 60.3, SD = 14.7), which falls at the upper end of the moderate support range according to commonly used MSPSS interpretive guidelines.

Pairwise (zero-order) Pearson correlations between variables are also included in Table 1. Social anxiety was positively associated with coping (r = .30, p < .05) and conformity drinking motives (r = .24, p < .05), and negatively associated with perceived social support (r = −.18, p < .05). Alcohol use was positively correlated with coping motives (r = .43, p < .05), but unrelated to social anxiety or social support. Perceived social support was negatively correlated with coping motives (r = −.23, p < .05).

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Table 1

Descriptive Statistics and Zero-Order Pairwise Correlations of the Variables Used In The Analysis

(Variable num.)	Variable name	Variable descriptive statistics					Pairwise correlations						
		N	Mean	(*SD*)	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1)	Social Anxiety (SIAS)	152	14.3	(4.8)	6	26	1						
(2)	Alcohol Use Disorder score (AUDIT-C)	152	7.0	(2.1)	4	13	0.056	1					
(3)	Perceived Social Support (MSPSS)	152	60.3	(14.7)	18	84	-0.183*	-0.058	1				
(4)	Coping Drinking Motives	152	12.5	(5.1)	5	24	0.297*	0.427*	-0.229*	1			
(5)	Conformity Drinking Motives	152	9.3	(4.4)	5	22	0.235*	0.138	-0.111	0.296*	1		
(6)	Age	152	20.2	(1.7)	18	25	-0.107	0.042	0.076	-0.101	-0.081	1	
(7)	Gender=Male	152	0.26	(0.44)	0	1	-0.037	0.122	-0.064	0.049	0.146	0.199*	1

Note. The (*SD*) stands for standard deviation.
*$p < .05$.

1. Direct Effects

The results of the SEM model are summarized in Table 2. Social anxiety had a significant positive effect on both coping (β = .260, p = .001) and conformity (β = .222, p = .006) drinking motives, indicating that higher levels of social anxiety were associated with greater endorsement of both motives.

Table 2

Parameter Estimates of the SEM Model, Direct and Indirect Effects, Path Coefficients, Residual Variances and Covariances, Model Fit Statistics

A) Model direct effects:

Variable path	Observed Coef.	(SE)[a]	Z-score	*p*-value	Standardised Coef. (β)
Endogenous variable: Coping Drinking Motives					
Social Support (MSPSS)	-0.059	(0.029)	-2.07	.038	-0.172*
Social Anxiety (SIAS)	0.276	(0.086)	3.20	.001	0.260**
Gender=Male	0.717	(0.944)	0.76	.447	0.062
Age	-0.218	(0.215)	-1.02	.309	-0.072
Endogenous variable: Conformity Drinking Motives					
Social Support (MSPSS)	-0.016	(0.024)	-0.66	.512	-0.053
Social Anxiety (SIAS)	0.204	(0.074)	2.74	.006	0.222**
Gender=Male	1.685	(0.815)	2.07	.039	0.168*
Age	-0.228	(0.190)	-1.20	.231	-0.087
Endogenous variable: Risky Alcohol Use (AUDIT-C) score					
Coping Drinking Motives	0.176	(0.034)	5.20	< .001	0.429***
Conformity Drinking Motives	0.002	(0.042)	0.05	.959	0.005
Gender=Male	0.409	(0.406)	1.01	.313	0.086
Age	0.084	(0.097)	0.87	.386	0.068
Social Support (MSPSS)	constr. to 0	—	—	—	constr. to 0
Social Anxiety (SIAS)	constr. to 0	—	—	—	constr. to 0

B) Model indirect effects:

Variable path	Observed Coef.	(SE)[a]	Z-score	*p*-value	Standardised Coef. (β)
Exogenous variable: Risky Alcohol Use (AUDIT-C) score					
Social Support (MSPSS) [b]**, overall indirect effect**	-0.010	(0.005)	-2.08	.037	-0.074*
indirect effect *via* Coping	-0.010	(0.005)	-2.08	.038	-0.074*
indirect effect *via* Conformity	0.000	(0.001)	-0.06	.956	0.000
Social Anxiety (SIAS) [b]**, overall indirect effect**	0.049	(0.017)	2.82	.005	0.113**
indirect effect *via* Coping	0.048	(0.018)	2.66	.008	0.112**

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indirect effect *via* Conformity	0.000	(0.008)	0.06	.956	0.001
Gender=Male	0.130	(0.177)	0.73	.465	0.027
Age	-0.039	(0.039)	-1.00	.319	-0.031

C) Residual variances and covariances:

Residual term	Observed Coef.	(SE)[a]	Z-score	*p*-value	Standardised Coef. (β)
Variance(error-Coping)	22.29	(2.187)	—	—	0.873
Variance(error-Conformity)	17.47	(1.867)	—	—	0.910
Variance(error-AUDIT-C)	3.44	(0.391)	—	—	0.803
Covariance(error-Coping, error-Conformity)	4.44	(1.560)	2.84	.004	0.225

Model fit statistics:

$\chi^2(d.f.) = 1.07(2)$, p-value = .586

RMSEA (90% CI) = 0.000 (0.000–0.134), p-value (RMSEA ≤ 0.05) = .690

Comparative fit index, CFI = 1.000 Tucker-Lewis index, TLI = 1.112

Standardised root mean squared residual, SRMR = 0.013

Coefficient of determination, CD = 0.188

Note. RMSEA stands for Root mean squared error of approximation. CI stands for confidence interval.
[a]Bootstrapped standard errors (SE) after 500 replications. [b]Mediated indirect effects of both Social Anxiety (SIAS) and Social Support (MSPSS) on the Risky Alcohol Use (AUDIT-C) score are shaded.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Perceived social support was negatively associated with coping motives (β = −.172, p = .038), but had no significant effect on conformity motives (β = −.053, p = .512). This suggests that lower perceived support is linked to greater coping-related drinking, but not to drinking for conformity.

Coping motives significantly predicted past-year alcohol use (β = .429, p < .001), indicating a strong positive relationship. In contrast, conformity motives had no significant effect on alcohol use (β = .005, p = .959), after adjusting for other variables in the SEM model.

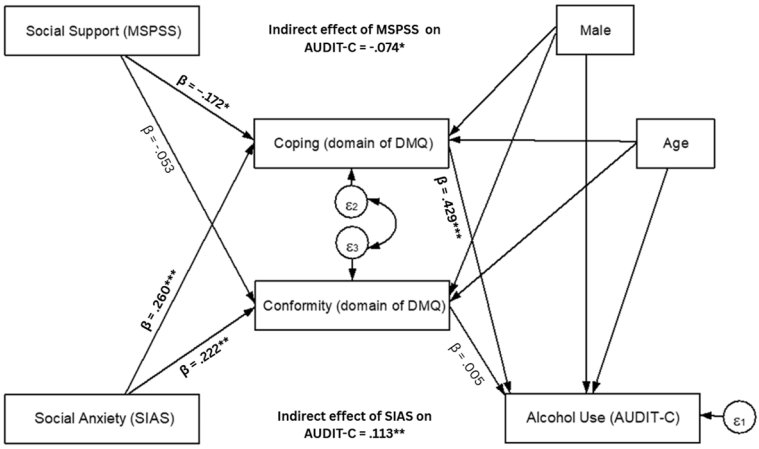
2. Mediated Indirect Effect

The results of the SEM model also provide evidence for the significance of an indirect relationship between both social anxiety and perceived social support on alcohol use (Figure 2). The effect sizes of the indirect effects of social anxiety and perceived social support on alcohol use, as mediated by coping and conformity drinking motives, were rather small but statistically significant: β = .113, p-value = .005; β = -.074, p-value = .037, respectively.

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Figure 2

SEM Model With the Estimated Direct and Indirect Effects



Note. β states for standardised regression coefficients. The statistically significant β´s are bolded.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Discussion

Building on previous research that has identified different motivational pathways linking social anxiety to alcohol use (Buckner & Terlecki, 2016; Norberg et al., 2010), the present study sought to clarify the distinct roles of coping and conformity motives, as well as the potential protective influence of perceived social support. In contrast to some earlier findings (Buckner et al., 2006), social anxiety in the current study was linked to risky alcohol use through coping motives. Buckner et al. (2006) found that social anxiety was not associated with risky alcohol use (quantity), but rather with alcohol-related problems, and identified enhancement as a key pathway. This pattern aligns with alcohol literature showing that social anxiety is consistently associated with alcohol-related problems regardless of whether socially anxious individuals drink more or less (Villarosa-Hurlocker et al., 2019). In the current study, social anxiety emerged as a significant predictor of alcohol use via coping—but not conformity—drinking motives, aligning with prior research highlighting the mediating role of coping motives in the social anxiety–alcohol link (Ham et al., 2007; Ham, 2009).

University students with higher social anxiety levels appear more likely use alcohol to regulate their negative emotions (Buckner & Heimberg, 2010), placing them at greater risk for risky drinking behaviours. As Buckner and Heimberg (2010) note, socially anxious individuals may use alcohol to reduce distress in situations where they wish to participate socially but feel inhibited by anxiety. These findings are consistent with

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Stress-Response Dampening (SRD) theory (Levenson et al., 1980), which posits that alcohol use functions as a means of alleviating negative emotional states—such as worry, tension, or loneliness.

In line with previous research (Ham, 2009), conformity motives did not significantly influence the relationship between social anxiety and alcohol use. While some socially anxious individuals may engage in conformity drinking to meet peer expectations, their overall alcohol use may not necessarily reach harmful levels, particularly as many of them tend to avoid social situations altogether. Nonetheless, socially anxious students may face challenges in peer socialization (Stanger et al., 2016). Forming new peer relationships and integrating into a new social environment are important goals for most students, yet these tasks can be particularly daunting for individuals with high social anxiety (Arria et al., 2016). Furthermore, university social gatherings often involve alcohol use (Villarosa-Hurlocker et al., 2019), which may lead socially anxious students to use alcohol to alleviate anxiety and facilitate social integration.

The current study extends prior research by introducing a framework that incorporates perceived social support as a potential protective factor. Specifically, the findings revealed a protective indirect pathway, whereby greater perceived social support was associated with lower coping motives, which in turn predicted lower alcohol use. This pathway highlights how supportive relationships can buffer against the risk of coping-motivated drinking. Individuals who perceive higher levels of support appear less inclined to use alcohol as a means of regulating distress, suggesting that perceived social support may function as a resilience-enhancing mechanism. These findings are consistent with stress-buffering theory (Cohen & Wills, 1985) and complement previous research showing that students with stronger perceived support networks are less likely to rely on alcohol for emotional regulation (Small et al., 2011).

However, perceived social support was not associated with conformity drinking motives. This finding may reflect the distinct functional roles of coping and conformity motives, whereby coping motives primarily serve to regulate internal negative affect, while conformity motives are driven by external social pressures and normative expectations (Cooper, 1994; Kuntsche et al., 2006). Perceived social support may therefore be more effective in buffering emotional distress than in reducing exposure to, or concern about, peer drinking norms (Cohen & Wills, 1985). As perceived social support was assessed as a global construct, it may not capture source-specific influences (e.g., peer versus family support) that are more directly implicated in conformity processes. Taken together, these considerations suggest that social support may preferentially protect against negatively internally motivated drinking rather than drinking driven by social pressure.

These findings have important implications for developing targeted interventions for socially anxious students who use alcohol to manage negative emotions. Despite the risks, only about 1.5% of university students seek treatment for alcohol use, with even fewer socially anxious students doing so (Zakletskaia et al., 2010; Schry & White, 2013).

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The results suggest that focusing on coping-motivated drinking may be an effective strategy for reducing risky behaviour in this population. Interventions that integrate cognitive-behavioural and motivational approaches have been shown to improve both social anxiety and alcohol-related outcomes among individuals with high anxiety sensitivity (Olthuis et al., 2014, 2015). Moreover, high levels of perceived social support, identified in this study as a protective factor against coping drinking motives, could serve both to improve students' overall mental health and to prevent harmful alcohol use. Interventions designed to strengthen perceived social support—such as peer-mentoring schemes, student support groups, and programmes that promote social connectedness and help-seeking—may therefore represent useful adjunct strategies for reducing coping-motivated drinking and indirectly lowering risky alcohol use. Peer-support interventions in higher education have demonstrated benefits for student wellbeing, and peer-led alcohol interventions may reduce alcohol consumption and related harms among university students (Lavilla-Gracia et al., 2022).

This study has some limitations that should be acknowledged. First, the cross-sectional design precludes causal inferences regarding the relationships among social anxiety, perceived social support, drinking motives, and alcohol use. Cross-sectional mediation models can neither establish temporal precedence nor take into account reciprocal relationships between the variables (Kline, 2016; Maxwell et al., 2011). Nevertheless, they can serve as useful, theory-driven preliminary tests of proposed mechanisms (Hayes, 2018; Little, 2013; MacKinnon, 2008). Accordingly, the present study offers an initial evaluation of a novel pathway in which perceived social support is linked to lower alcohol use through reduced coping motives. Longitudinal or experimental research is needed to clarify whether social anxiety and perceived support function as risk or protective factors influencing coping and conformity motives. Second, self-reported data may have introduced social desirability bias, as participants might have underreported alcohol use (Sobell & Sobell, 1990). Recall bias may also have affected accuracy, given the retrospective nature of the questions (Sedgwick, 2014). Finally, the study was limited to a university student sample, which may restrict generalisability to clinical populations or the broader public. Despite these limitations, the findings contribute valuable insight into the mechanisms linking social anxiety and risky alcohol use in student populations.

In conclusion, this study provides preliminary evidence for both risk and protective pathways influencing alcohol use among university students. While social anxiety increases reliance on coping-motivated drinking, perceived social support exerts a protective effect by reducing endorsement of coping motives and consequently lowering alcohol use. Future longitudinal work should further investigate this protective pathway and evaluate social support–focused interventions as a strategy for reducing risky alcohol use in and beyond student populations.

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Data Availability: For this article, data is freely available (see Šíba & Kážmér, 2026).

Supplementary Materials

The dataset collected during the current study, the analysis code, and the study materials are available in the Open Science Framework (OSF) repository (see Šíba & Kážmér, 2026).

Index of Supplementary Materials

Šíba, O., & Kážmér, L. (2026). *The indirect effects of social anxiety and social support on alcohol use among the UK university students: The role of drinking motives* [Data, code, materials]. OSF. https://osf.io/9e6qn

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